

REMARKS

In the first Office Action, the Examiner rejected claims 1-4, 6, and 9-15 under 35 U.S.C. §102(b) as being anticipated by Kittleson (US 4,575,800). The Examiner objected to claims 5, 7, 8, and 16 as being dependent upon a rejected base claim, but indicated these claims would be allowable if appropriately rewritten in independent form. The Examiner withdrew claims 17-24 from consideration making the restriction requirement final.

As reflected in the Claim Listing, Applicant has amended claims 5, 6, 8-10 and 16 and added new claims 25-28. Applicant has cancelled claims 17-24 without prejudice and may pursue them in a divisional application. Claims 1-16 and 25-28 are currently pending in this application.

Reconsideration and re-examination of the application as amended is respectfully requested.

Rejection Under 35 USC §102(b)

The Examiner rejected claims 1-4, 6, and 9-15 as being anticipated by US 4,575,800 to Kittleson. Applicant respectfully disagrees and traverses the Examiner's rejection.

Applicant's invention as disclosed and claimed in independent claim 1 determines a difference between a first parameter value generated by a control system and a second parameter value determined by a control system monitor. A weighting factor is applied to the difference and the engine is controlled based on the weighted difference. The Examiner relies on Kittleson '800 stating that Kittleson discloses a first parameter (shaft rotation speed) and a second parameter (the speed of other shaft segments) which are compared and a weighting factor is applied. However, this is a mischaracterization of Kittleson '800. As described in Col. 7, ll. 11-42, the "plurality of segments" disclosed by Kittleson refer to time segments or periods. The shaft speed (a single parameter) is measured during these different segments or time periods with a weighting factor applied to the difference based on the acceleration of the shaft. The shaft speed measured at different times does not meet Applicant's claimed limitations of a first parameter value determined by the control system and a second parameter value determined by a control system monitor. As described by Applicant in the specification and recited in various dependent claims including claim 9, the control system monitor

preferably determines the second parameter value independently of the first parameter value, which is determined by the control system (not the monitor). Kittleson does not disclose such a monitor, but only a control system to control the shaft speed.

Specifically, with respect to claim 9, Kittleson does not disclose determining the second parameter value based on inputs from a plurality of sensors as claimed by Applicant. As described in the specification, the plurality of sensor inputs are used to preferably independently determine the second parameter value. As described above, Kittleson discloses only a single sensor to measure the shaft speed and uses that sensor to measure the shaft speed over various time segments of the dither cycle.

For the reasons stated above, Applicant respectfully submits that the invention as claimed in originally filed claims 1, 4, and 9 is clearly distinguishable over the prior art relied upon by the Examiner and request that the rejection under 35 U.S.C. §102(b) be withdrawn.

Rejection Under 35 USC §103(a)

The Examiner rejected claims 2-3 and 10-15 as being unpatentable over Kittleson (US 4,575,800). Applicant respectfully disagrees and traverses the Examiner's rejection.

As described above, Kittleson fails to disclose first and second parameter values determined as disclosed and claimed by Applicant. In addition, Kittleson fails to teach or suggest the features found in Applicant's dependent claims 2-3 and 10-15.

The Examiner relies on Official Notice that engines frequently measure a variety of engine parameters including torque, speed, barometric pressure and mass airflow and "use these parameters to control the engine for efficient fuel economy." While Applicant generally agrees with the Examiner's statement, Applicant respectfully submits that the Examiner has failed to make a prima facie showing of obviousness based on the general assertion that engines use a variety of parameters to control the engine for efficient fuel economy. The Examiner has not stated how one of ordinary skill in the art at the time of Applicant's invention would have been motivated to modify the disclosure or teachings of Kittleson to include the features of Applicant's claims 2-3 and 10-15 "for efficient fuel economy." Applicant's invention is directed to a robust control system parameter monitor. As stated in the Background section of the specification, prior art parameter monitors may

incorrectly trigger alternative control strategies in response to deviation of one or more system components or models which are within the expected tolerance of those elements. Kittleson does not recognize this problem and does not teach or suggest a solution to the problem. Kittleson is directed to improving the control system "of the type in which a machine control parameter is oscillated back and forth about a given setting" by synchronizing the oscillations of the control with the engine cycles. (See Col. 3, l. 62 - Col. 4 l. 30. for example)

For example, with respect to claim 3, Kittleson '800 does not teach or suggest estimating the second parameter value, or estimating the second parameter value based on at least engine speed, barometric pressure, and mass airflow. Whether or not it is well known to use these parameters to obtain "efficient fuel economy", the Examiner has not provided any evidence of how one of ordinary skill in the art would know to use these parameters to solve the problem recognized by Applicant in the manner disclosed and claimed by Applicant. Likewise, with respect to claim 10 (and claim 9 as discussed above), the Examiner has not identified a proper motivation for one of ordinary skill in the art to use inputs from a plurality of sensors to estimate the second parameter value as disclosed and claimed by Applicant.

For the reasons stated above, Applicant respectfully submits that the Examiner has failed to make a prima facie showing of obviousness and that the rejection under 35 USC §103 should be withdrawn.

Objection to Claims 5, 7, 8, and 16

The Examiner objected to these claims as being dependent upon a rejected base claim but indicated that they would be allowable if appropriately rewritten. Applicant has amended claims 5, 8 and 16 to obviate the Examiner's objection. Applicant has amended claim 6 to depend from claim 5 so that claim 6 is also allowable. New claims 25-28 depend from claim 16 and are therefore also.


Claim 7 has been maintained as filed and depends from claim 1, which is believed to be patentable over the prior art of record as described above such that the objection is obviated.

Summary

Applicant has made a genuine effort to respond to the Examiner's rejections and objections to advance the prosecution of this case. Applicants respectfully submit that all formal and substantive requirements for patentability have been met and that this case is in condition for allowance, which action is respectfully requested. If any further amendment is necessary to advance prosecution and place this case in allowable condition, the Examiner is courteously requested to contact the undersigned by fax or telephone at the number listed below to discuss.

No additional fee is believed to be due as a result of the filing of this paper. However, please charge any required fees associated with filing of this paper to Deposit Account 06-1510 (Ford Global Technologies, LLC). If there are insufficient funds in this account, please charge the fees to Deposit Account No.06-1505.

Respectfully submitted,



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